

**Remarks:**

This application has been reviewed carefully in view of the Office Action mailed August 17, 2004 ("the Office Action"). In the Office Action, claims 6-7, 10-13 and 16-17 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 6,061,562, to Martin et al., in view of Wiedeman et al., U.S. Patent No. 5,884,142. Claim 18 was rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al. and Wiedeman et al., and further in view of Knoblauch et al., U.S. Patent Pub. No. US2002/0072361A1. Claim 22 was rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al. and Wiedeman et al., and further in view of Gross, U.S. Patent No. 6,075,483. Claim 23 was rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al. and Knoblauch et al., and further in view of Wiedeman et al. Claims 28-29 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al., Knoblauch et al., Wiedeman et al., and further in view of Gross. Claims 8-9, 14-15 and 19-20 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al. and Wiedeman et al., and further in view of Hibbs et al., U.S. Patent No. 5,810,284. And finally, claims 26-27 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Martin et al., Knoblauch et al., Wiedeman et al., and further in view of Hibbs et al.

The above-described rejections are addressed as follows:

**CLAIM REJECTIONS UNDER 35 U.S.C. § 103(a)**

Applicants appreciate the examiner's assistance in the telephonic interview conducted September 21, 2004.

**Claims 6-10**

As agreed in the interview, claim 6 has been amended per the examiner's request for clarification of the term "generally fixed orientation." Independent claim 6 now recites:

... positioning the suborbital platform and *aiming the antenna* such that the suborbital platform is within the beamwidth of the antenna's signal; *maintaining the antenna's aim in a fixed orientation*; and flying the suborbital platform in a pattern that maintains the suborbital platform within the beamwidth of the signal. (emphasis added)

In the above-referenced interview, the examiner agreed that neither Martin et al., Wiedeman et al., nor any of the other cited references disclose a suborbital platform flying within the beamwidth of a fixed orientation antenna as now recited in claim 6.

Wiedeman et al. relates to orbiting satellites, which by definition excludes suborbital platforms. While Wiedeman et al. does refer to “fixed user terminals” (col. 4, line 51) and “fixed users” (col. 6, lines 47-48), the term “fixed user” refers to users that are fixed in location, not antennas that are aimed in a fixed orientation. This is apparent when Wiedeman et al. recites that “[b]oth fixed users 1206 and roaming users 1106 may be located within the gateway service region...” (Wiedeman et al., col. 6, lines 47-49). Similarly, Martin et al. fails to disclose antennas fixed in orientation, and instead discloses the use of gimbaled, mechanically actuated tracking antennas and antenna tracking modules (col. 4, lines 56-60, col 6, lines 31-35, and col. 10, lines 35-44) to follow the path of an aircraft.

In sum, neither Martin et al., Wiedeman et al., nor any of the other cited references, disclose or make obvious flying a suborbital platform within the beamwidth of an antenna with fixed orientation. Accordingly, the rejection of independent claim 6, and its dependent claims 7-10, under 35 U.S.C. § 103(a) is now improper, and Applicants respectfully request it be withdrawn.

### Claims 11-12

As discussed in the interview, independent claim 11 recites:

... wherein the downward-pointing antenna and the upward-pointing antenna are *aimed* such that they *delimit a geostationary region of airspace* that is within both signal beam-widths; and a *suborbital platform* configured to fly a pattern entirely within the delimited region of airspace.  
(emphasis added)

The examiner agreed that neither Martin et al., Wiedeman et al., nor any of the other cited references, disclose a suborbital platform flying entirely within the geostationary region delimited by the beamwidths of an upwardly pointing antenna and a downwardly pointed antenna, as recited in claim 11.

As noted in the discussion of claim 6, Wiedeman et al. relates to orbiting satellites, which by definition excludes suborbital platforms. The citations identified in the Office Action fail to disclose ground antennas and satellites delimiting a region of airspace within their beamwidths. More particularly, in col. 4, lines 25-55, Wiedeman et al. discloses defining a region *on the surface of the earth* as a Regional Service Area, while in col. 6, lines 41-54 discuss gateway coverage or service regions, and providing service to fixed users and roaming users, as previously noted above.

Accordingly, the rejection of independent claim 11, and its dependent claim 12, under 35 U.S.C. § 103(a) is improper, and Applicants respectfully request it be withdrawn.

#### Claims 13-16

Independent claim 13, which was not discussed in the interview, recites:

... a suborbital platform maintained at a non-equatorial latitude that prevents the ground station from being within the beamwidth of communication signals transmitted by the spacecraft toward the suborbital platform, and that prevents the spacecraft from being within the beamwidth of communication signals transmitted by the ground station

toward the suborbital platform; wherein *the ground station maintains both a direct communications signal and an indirect communications signal with the spacecraft, the indirect communications signal being directed to the suborbital platform which relays the signal to the spacecraft*; ... (emphasis added)

Wiedeman et al. fails to recite a single ground station maintaining both a direct communications signal and an indirect communications signal with the spacecraft, the indirect communications signal being directed to the suborbital platform which relays the signal to the spacecraft. In col. 4, lines 25-55, Wiedeman et al. defines a *region* on the surface of the earth rather than an individual ground station maintaining both direct and indirect communication. Similarly, in col. 6, lines 41-54 discuss gateway coverage or service regions.

Accordingly, the rejection of independent claim 13, and its dependent claims 14-16, under 35 U.S.C. § 103(a) is improper, and Applicants respectfully request it be withdrawn.

**Claims 17-20 and 22**

Independent claim 17 recites:

... wherein each terminal has a terminal antenna configured for carrying the communication signal, the terminal antenna being configured such that the airplane's entire flight station falls within the terminal antenna's beamwidth *without any adjustment of the terminal antenna's aim*. (emphasis added)

Claim 17 has a similar feature to one in claim 6, in regards to an airplane's entire flight station falling within an antenna's beamwidth, and falls within the scope of the

subject matter of the above-referenced interview. As previously discussed, neither Martin et al., Wiedeman et al., nor any of the other cited references, disclose this feature.

Accordingly, the rejection of independent claim 17, and its dependent claims 18-20 and 22 under 35 U.S.C. § 103(a) is improper, and Applicants respectfully request it be withdrawn.

**Claims 23 and 26-29**

Claims 23 and 26-29 were rejected under 35 U.S.C. § 103(a), over various references, all including Martin et al. and Knoblach et al., as reciting some or all of the features of the claims. Claim 23 has been amended to clarify the feature of each airplane flying within a flight station.

As amended, independent claim 23 now recites:

... a plurality of airplanes including a first airplane and a second airplane, each airplane *stationkeeping within a geostationary flight station*; and

...

wherein the networks of the first airplane and the second airplane are configured to communicate with terminals in one or more of the same communication cells using the same wavelengths;

...

wherein each airplane's respective station is outside of the oriented beamwidths of the terminal antennas that are in communication with other airplanes.

Neither Martin et al., Knoblach et al., nor the other cited references, disclose or make obvious, the combination of flying a plurality of airplanes, each stationkeeping within a geostationary flight station, wherein the networks are configured to communicate with terminals in one or more of the same communication cells using the same

wavelengths, and wherein each airplane's respective station is outside of the oriented beamwidths of the terminal antennas that are in communication with other airplanes.

For these reasons, the cited references fail to make obvious the invention of claim 23. Accordingly, the rejection of independent claim 23, and its dependent claims 26-29 is now improper, and Applicants respectfully request it be withdrawn.

### CONDITIONAL REQUEST FOR INTERVIEW

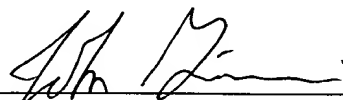
Applicants again thank the examiner for the after-final interview.

In light of the present amendments and remarks, the applicants believe that the claims are now in condition for allowance. Nevertheless, the applicants request a telephonic interview to try and efficiently resolve any claims that the examiner does not feel are in condition for allowance.

In view of the foregoing, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

COX et al.

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